

Teaching basic animal health care in Municipal Schools of Imperatriz, Maranhão, Brazil

ARTICLE

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Abstract

In 2022, the animal population in Brazil was approximately 167 million animals. The study aimed to provide information and report on how students understand basic care for small animals, addressing topics such as hygiene, nutrition, dental health, and dermatological care for pets. The methodology was divided into two stages: the first consisted of a bibliographic study and preparation of didactic material, while the second involved lectures and workshops in schools, followed by the application of questionnaires to assess students' knowledge before and after the educational activities (Chaer *et al.*, 2012). The results showed a significant increase in students' knowledge retention after the lectures, demonstrating the effectiveness of the educational interventions. The study concluded that education in animal health is essential to promote animal welfare and raise awareness among the population from childhood about the importance of basic pet care.

Keywords: Extension. Veterinary. Education. Dermatology. Nutrition.

Ensino de cuidados básicos sobre saúde animal em escolas municipais de Imperatriz, Maranhão, Brasil

Resumo

A população de animais no Brasil em 2022 representou aproximadamente 167 milhões de animais. O objetivo do estudo foi fornecer informações e relatar como os estudantes compreendem os cuidados básicos com pequenos animais, abordando temas como higiene, alimentação, saúde bucal e dermatológica dos pets. A metodologia foi dividida em duas etapas: a primeira consistiu em um estudo bibliográfico e preparação de material didático, enquanto a segunda envolveu palestras e oficinas nas escolas, seguidas pela aplicação de questionários para avaliar o conhecimento dos estudantes antes e depois das atividades educativas (Chaer *et al.*, 2012). Os resultados mostraram um aumento

significativo na retenção de conhecimento pelos alunos após as palestras, evidenciando a eficácia das intervenções educativas. O estudo concluiu que a educação em saúde animal é fundamental para promover o bem-estar dos animais e sensibilizar a população desde a infância sobre a importância dos cuidados básicos com os pets.

Palavras-chave: Extensão. Veterinária. Educação. Dermatologia. Nutrição.

1 Introdução

The pet population in Brazil in 2022 was over 167 million, with the population of dogs and cats at 67.8 million and 33.6 million respectively. This scenario was accompanied by the growth of the Brazilian pet industry, which in 2023 generated 47 million reais for the domestic market and 447 million dollars in exports (ABINPET, 2024). Given this, it is notable that more and more animals are entering homes, with many guardians considering their animals to be members of the family (Bragança; Queiroz, 2021). In this sense, it is becoming increasingly essential to disseminate information about animal health, promoting well-being.

The welfare of farm animals, especially pets, is increasingly linked to the theme of "responsible ownership", which involves promoting animal care. This includes promoting physical and mental well-being, feeding, hygiene, deworming, vaccinations and veterinary treatment (Brandt *et al.*, 2021). With this in mind, the Farm Animal Welfare Advisory Committee (FAWC) created a document in 1979 that describes the "Five freedoms of animals", addressing the ideal living conditions for these animals so that they can live healthily (Silva; Dias, 2023).

For a healthy life, brushing teeth is one of several hygiene measures that promote the health of pets. This practice prevents the onset of periodontal diseases, which are inflammatory and chronic. These diseases develop in the periodontium and gums and are caused by various factors, such as poor oral hygiene, unbalanced diet, age, genetic factors and breed (Morais, 2020). In addition to dental problems, these animals are also susceptible to dermatopathies, which, as well as being one of the main cases in the

veterinary routine, many of these diseases are zoonoses and can be transmitted to people (Rosa *et al.*, 2021). In other words, coat care should be carried out frequently.

Food is one of the pillars of animal health and must meet all the nutritional needs of animals, ensuring a balance between proteins, carbohydrates, fats, micronutrients and minerals, ensuring the health of pets and avoiding gastrointestinal disorders (Leite *et al.*, 2021). In addition, it is important to be aware of species-specific nutrition, avoiding offering foods that could cause poisoning or digestive problems. The most common toxic foods are chocolate, onions, garlic, grapes, raisins, milk, coffee and alcohol (Bragança, 2023).

In view of this, it is essential to raise awareness among the population, especially in childhood and adolescence, about basic care for pets. This measure can guarantee animal health and prevent animals from being abandoned, helping to maintain public health and reduce the transmission of zoonoses. With this in mind, the aim of this study was to report on the knowledge of students from the municipal school network in Imperatriz, Maranhão, Brazil, about animal health before and after the application of a questionnaire on animal health.

2 Methodology

The study was carried out in the city of Imperatriz, Maranhão, located in the northeast region of Brazil. A total of 10 classes from 4 different schools were visited. The work was carried out in two stages. The first consisted of a bibliographic study of the content that would be covered in the lectures and workshops for the students. The combination of descriptors included: "animal health", "basic animal care", "animal hygiene", "zoonoses" and "intoxications", adapting them to each of the databases. The databases used were Scopus and PubMed. Based on these searches, pamphlets were produced listing toxic foods for pets, mandatory vaccinations and the main precautions for pets living at home.

The second phase consisted of lectures lasting an average of 40 minutes, covering basic pet care, such as tooth brushing, endo- and ectoparasite control, feeding and hair

brushing (Figure 1). The lectures were given in Imperatriz municipal schools, chosen at random by the Municipal Education Department (SEMED).

Figure 1. Slides from the presentation during the lectures at the municipal schools in Imperatriz, Maranhão, Brazil.



Source: Authors (2024).

Before and after the lectures, each student received a sheet containing questions on the topics of environment, hygiene (oral health and dermatology) and animal feed (06 objective questions, with alternatives A and B) to assess the students' level of understanding. The methodology adopted for data collection involved the use of questionnaires (initial and final were with the same questions in order to synthesize learning), as described by Chaer *et al.* (2012), to collect important information.

These actions are part of a continuing education program developed by the Center for Advanced Morphophysiological Studies (NEMO), a CNPq-registered study group that promotes the area of Science Popularization and Dissemination Studies in the Eastern Amazon. NEMO was important for carrying out the project by providing transport for the students, guidance on searching scientific databases and devising the project.

All the results of the activities were tabulated using the Google Forms platform, where the graphs were generated. The data was also entered into Excel spreadsheets. The data obtained was used to characterize the students' level of knowledge about basic animal care.

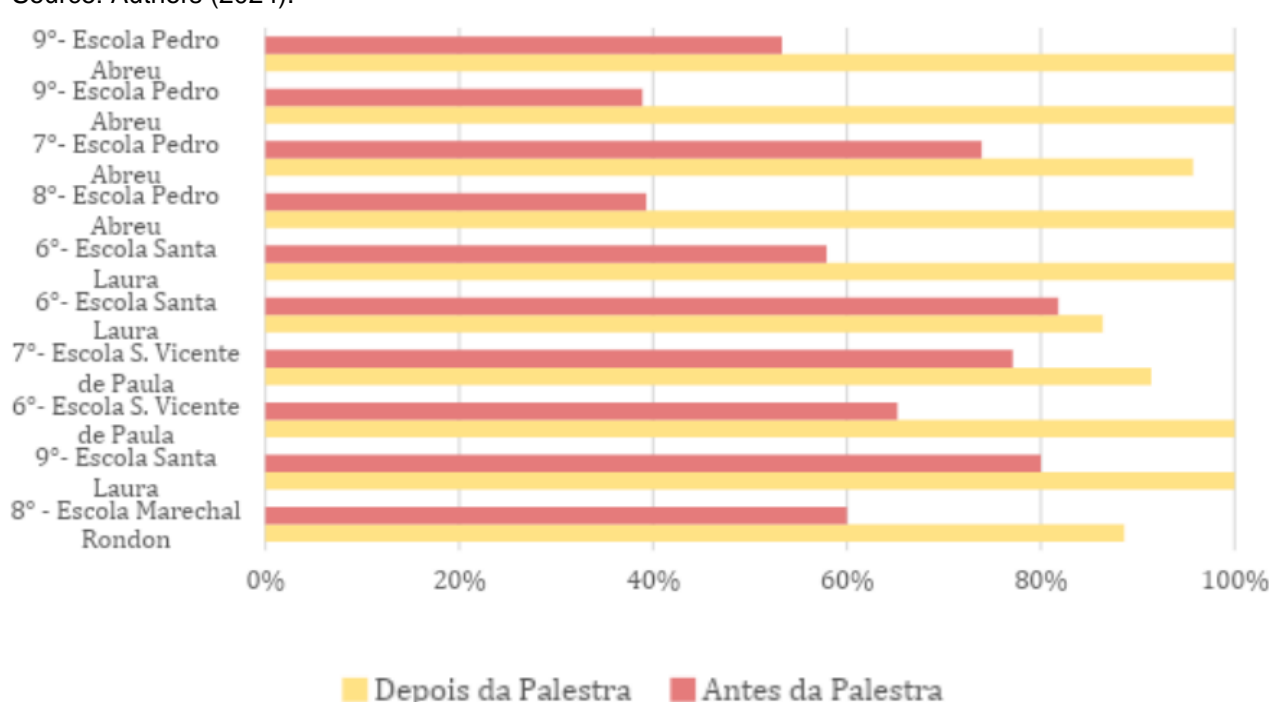
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3 Results and Discussion

The percentage of correct answers given by the students to the question "Do dogs and cats need specific places to be kept?" was less than 85% (Figure 2). This result indicates insufficient initial knowledge about the need for appropriate environments for keeping pets. The environment is one of the main factors affecting the quality of life of animals, and should be clean, spacious and allow animals to manifest their natural behaviors (Santos and Dorneles, 2022). Promoting animal health is essential for society and should reach as many people as possible, addressing all age groups, with the aim of building a more conscious society (Santos, 2021).

Figure 2 - Average knowledge of students from Imperatriz, Maranhão, Brazil, on the question "Do dogs and cats need specific places to be kept?"

Source: Authors (2024).

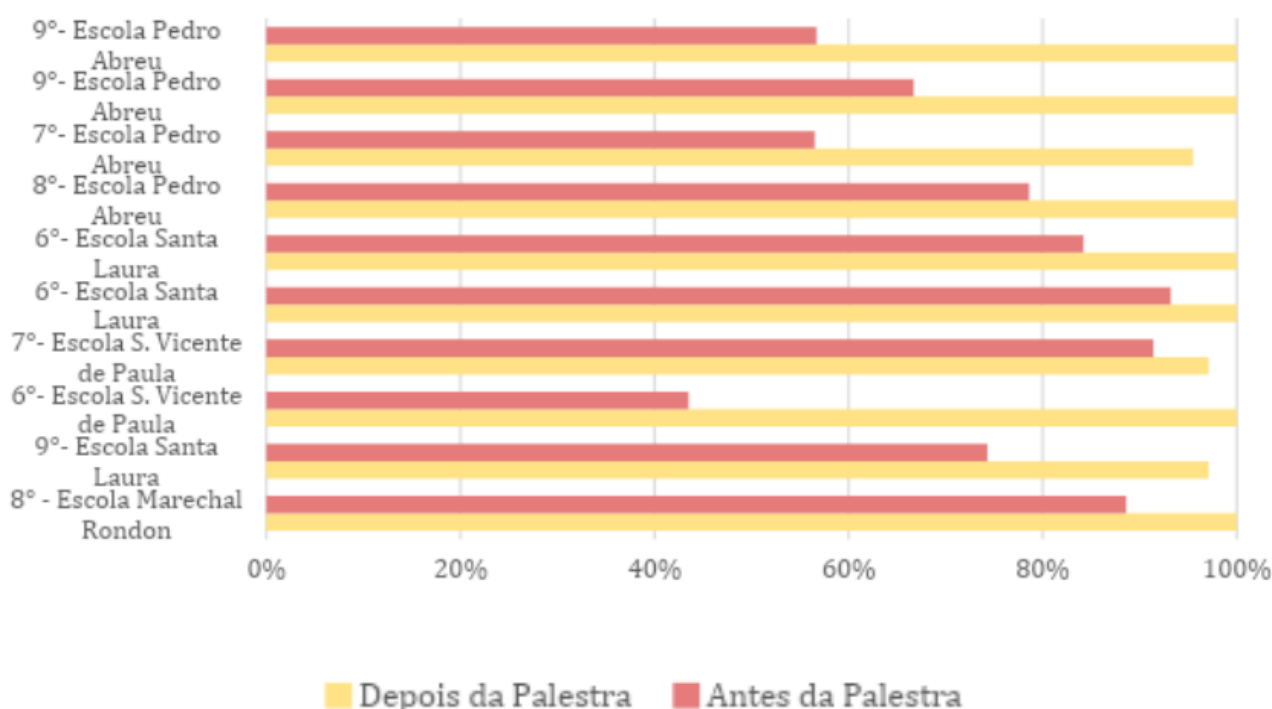


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After the educational talks, all the classes showed an improvement, with results ranging from 80% to 100% correct. This shows that the lectures were effective in increasing the students' knowledge of the animal environment, reinforcing the idea that education is a crucial tool for building a more aware society (Louzardo *et al.*, 2021). These data show the efficiency of disseminating information as an educational strategy, promoting animal welfare.

Regarding dental and dermatological care, some schools achieved more than 85% correct answers (Figure 3). After the lectures, 7 out of 10 classes achieved 100% correct answers. In comparison, a study carried out in Maricá on American Tegumentary Leishmaniasis showed similar levels, with 89.9% of the 213 students interviewed reporting knowledge of the disease after the educational intervention (Uchôa *et al.*, 2004). These results are significant, considering that the main diseases in routine veterinary practice are related to dermatological and dental problems which, depending on their severity, can lead to the animal's death (Espinoza, Pincay, León and Gonzáles-Puetate, 2023).

Figure 3 - Average knowledge of students from Imperatriz, Maranhão, Brazil, on the question "Is brushing hair and teeth important for animal health?"



Source: Authors (2024).

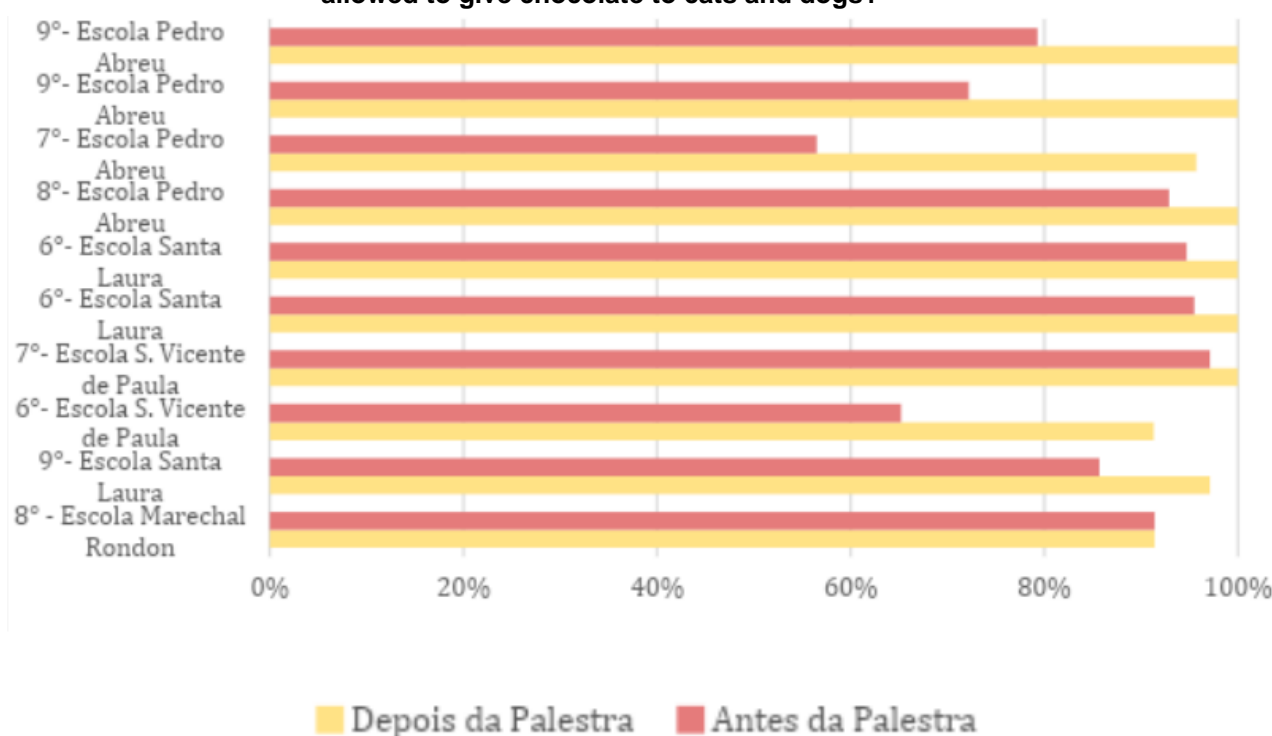
Dermatopathies, especially zoonotic ones, are worrying and require greater attention, as noted by Ribeiro *et al.* (2021). A study by Carvalho and Mayorga (2016) in Rio de Janeiro revealed that 57% of the 70 students interviewed were unaware of the transmission of diseases from animals to humans. Unawareness of the possibility of animal-to-human transmission is one of the main risk factors for the occurrence of zoonoses (Costa, 2023). This reinforces the need for continuous educational actions to raise awareness about zoonoses.

One of the main problems in the coexistence of animals and people is anthropomorphism, which consists of attributing human characteristics and habits to animals, such as offering pets unsuitable food (Fischer *et al.*, 2022). Before the lectures, many students already knew that chocolate should not be fed to animals, but after the

lecture, this knowledge became even more widespread (Figure 5). Chocolate contains substances such as theobromine and caffeine, which stimulate the central nervous and cardiovascular systems of animals and can have toxic effects (Silva e Silva, 2022). Therefore, addressing issues like this is crucial to combat the humanization of animal feed and promote healthier and safer practices for domestic animals.

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Figure 5 - Average knowledge of students from Imperatriz, Maranhão, Brazil, on the question "Is it allowed to give chocolate to cats and dogs?"



Source: Authors (2024).

4 Conclusions

Spreading information about caring for animals that live with people is an essential tool for preventing future zoonoses. Animal health education should begin in childhood, raising awareness among the population and generating benefits for the ecosystem and human health. Healthy animals do not spread disease, which reinforces the importance of

comprehensive education. This study concluded that the students showed significant retention of knowledge about caring for the environment, fur, parasites and the oral health of animals. This shows the effectiveness of educational talks and highlights the importance of extension projects on animal health. Educational interventions, therefore, are fundamental to forming informed citizens who are prepared to promote animal welfare.

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